

WHAT IS CLAIMED IS:

1. A feed roll assembly to be used in conjunction with an apparatus for performing a master processing operation, the apparatus comprising a frame and a master processing assembly constructed and arranged to perform a master processing operation wherein said processing assembly causes adhesive bonding between adhesive carrying substrates fed therein, said feed roll assembly comprising:

a feed roll having a core about which a supply of stock material is wound and a generally radially extending annular flange fixedly mounted at an opposing end of said core; and

feed roll mounting structure constructed and arranged to removably mount said feed roll to the frame of said apparatus, said feed roll mounting structure providing a pre-tension brake providing a pair of brake surfaces defining a flange receiving space and frictionally engaging opposing sides of said flange such that, when said feed roll mounting structure is removably mounted on the apparatus frame and said stock material is being unwound from said core, said core with said flange fixed thereon rotates relative to said feed roll mounting structure so that braking friction is created between said flange and the braking surfaces of said pre-tensioning brake.

2. A feed roll assembly according to claim 1, wherein said feed roll mounting structure is a cartridge body structure, said feed roll assembly further comprising:

another feed roll having a core about which a supply of stock material is wound and a generally radially extending annular flange fixedly mounted at one end of the opposing ends of said core;

said cartridge body structure providing another pre-tension brake providing a pair of braking surfaces constructed and arranged to frictionally engage opposing sides of said flange of said another feed roll such that, when said cartridge body structure is removably mounted on the apparatus frame and said stock material is being unwound from the core of said another feed roll, said core of said another feed

roll with said flange fixed thereon rotates relative to said cartridge body so that braking friction is created between the flange of said another feed roll and the braking surfaces of said another pre-tensioning brake.

3. A feed roll assembly according to claim 2, wherein the braking friction applied by each pre-tension brake progressively decreases as stock material is unwound from each core.

4. A feed roll assembly according to claim 3, wherein the braking friction applied by each pre-tension brake progressively decreases as the stock material is unwound such that the amount of force required to unwind stock material from each core remains essentially constant as the supply of stock material on each core is depleted

5. A feed roll assembly according to claim 4, wherein said core is of generally tubular construction and wherein each radially extending annular flange is provided by an end cap mounted at a respective end of the core, each end cap and said cartridge body structure each being constructed of a respective molded plastic material.

6. A feed roll assembly according to claim 5, wherein each pre-tension brake includes a flexible molded plastic braking structure providing one of said braking surfaces thereon, each pre-tension brake being constructed and arranged such that when said opposite sides of said flange are frictionally engaging said pair of braking surfaces, the braking structure is in a relatively highly flexed condition so that the pair of braking surfaces provide a relatively high degree of braking friction to said core, the molded plastic of the braking structure wearing down as the stock material is unwound from the associated core thereby progressively lessening the degree of flexure of said braking structure such that the amount of braking friction applied by said braking surfaces to said core progressively decreases so that the amount of force required to unwind stock material decreases as the stock materials

are depleted as aforesaid.

7. A master processing apparatus for use with a pair of removable feed rolls, the removable feed rolls each carrying a supply of stock material to be unwound, at least one of the stock materials having a layer of adhesive provided thereon, said apparatus comprising:

a frame having an opening at a feed side thereof;

a pair of feed roll mounting structures constructed and arranged to removably rotatably mount the pair of feed rolls in said frame for unwinding rotational movement of the feed rolls with respect to said frame;

a master processing assembly;

said frame being constructed and arranged such that, when the feed rolls are removably mounted thereto, a master can be inserted through the opening in the feed side of said frame and into said master processing assembly together with the stock materials unwound from their respective feed rolls and disposed on opposing sides of the master;

said master processing assembly being constructed and arranged to perform a master processing operation wherein said processing assembly causes adhesive bonding between the master and stock materials being fed in a feed side thereof and subsequently discharges the processed master and stock materials outwardly from a discharge side thereof; and

each said feed roll mounting structure being constructed and arranged to apply braking tension to the associated feed roll, the braking tension progressively decreasing as the stock material carried on the associated feed roll is unwound.

8. A master processing apparatus according to claim 7, wherein each feed roll has a core about which a supply of stock material is wound and a generally radially extending annular flange fixedly mounted at an opposing end of said core, the feed roll mounting structure associated therewith providing brake surfaces frictionally engage opposing sides of each said flange such that when said stock material is being unwound from said core, said core with each said flange fixed

thereon rotates relative to said feed roll mounting structure so that progressively decreasing braking friction is created between each said flange and the braking surfaces associated therewith.

9. A master processing apparatus according to claim 8, wherein each said feed roll mounting structure is removably mounted on the apparatus frame.

10. A master processing apparatus according to claim 9, wherein each said feed roll mounting structure is carried on a cartridge body structure removably mounted on the apparatus frame.

11. A master processing apparatus according to claim 10, wherein the braking friction applied by each said feed roll mounting structure progressively decreases as the stock material is unwound such that the amount of force required to unwind stock material from each core remains essentially constant as the supply of stock material on each core is depleted.

12. A master processing apparatus according to claim 11, wherein each said core is of generally tubular construction and wherein each radially extending annular flange is provided by an end cap mounted at a respective end of each said core, each end cap and said cartridge body structure each being constructed of a respective molded plastic material.

13. A master processing apparatus according to claim 12, wherein each said feed roll mounting structure on said cartridge body structure includes a flexible molded plastic braking structure providing one of said braking surfaces thereon, said cartridge body structure being constructed and arranged such that when said opposite sides of a flange are frictionally engaging an associated pair of said braking surfaces, the respective braking structure is in a relatively highly flexed condition so that the pair of braking surfaces associated therewith provide a relatively high degree of braking friction to the associated core, the molded plastic of each said

braking structure wearing down as the stock material is unwound from the associated core thereby progressively lessening the degree of flexure of each said braking structure such that the amount of braking friction applied by said braking surface thereof to said associated core progressively decreases so that the amount of force required to unwind stock material decreases as the stock materials are depleted as aforesaid.

14. A master processing apparatus according to claim 13, wherein the braking friction applied by each said feed roll mounting structure progressively decreases as the stock material is unwound such that the amount of force required to unwind stock material from each core remains essentially constant as the supply of stock material on each core is depleted as aforesaid.

15. A method for attaching a pair of feed rolls to feed roll mounting structure, the feed roll mounting structure enabling the feed rolls to be mounted to a master processing apparatus and having a pair of pre-tensioning brakes each providing a pair of braking surfaces on opposing sides of a flange receiving space; each of said feed rolls having a core about which a supply of stock material is wound and a generally radially extending annular flange fixed at an opposing end of said core, said method comprising:

rotatably mounting said feed rolls to said feed roll mounting structure with the flange of each feed roll received in a respective one of said flange receiving spaces, thus enabling said braking surfaces to frictionally engage the opposing side of said flange to create braking friction during unwinding of said stock material; and securing said feed rolls to feed roll mounting structure.

16. A method according to claim 15, wherein said feed roll mounting structure is a cartridge body structure.

17. A method according to claim 15, wherein said feed roll mounting structure is integrated into said apparatus.

18. A feed roll to be used in conjunction with an master processing apparatus for performing a master processing operation and feed roll mounting structure enabling the feed roll to be mounted to a frame of the master processing apparatus, the feed roll mounting structure providing pre-tension brake providing a pair of brake surfaces defining a flange receiving space, said feed roll comprising:

a core;

a supply of stock material wound about said core;

a flange extending radially from an opposing end of said core, said flange being configured to be received in said flange receiving space when said feed roll is mounted to said feed roll mounting structure such that said pair of braking surface frictionally engage opposing sides of said flange to create braking friction during unwinding of said stock material.